=> d his

(FILE 'USPAT' ENTERED AT 16:43:09 ON 09 DEC 1998)

```
L1            0 S 5406308
L2            1 S 5406308/PN
L3        88961 S SERIAL
L4            0 S L1 AND L2
L5       152455 S ANALOG
L6            0 S L1 AND L5
L7        11579 S SERIAL (2W) PARALLEL
L8            0 S L1 AND L7
L9            1 S 5696531/PN
L10           0 S L7 AND L9
L11           1 S 5283561/PN
L12           0 S L7 AND L11
L13           1 S 5065346/PN
L14           1 S L7 AND L13
L15       64358 S ANALOG (2W) DIGITAL
L16           0 S L15 AND L13
L17           1 S 4851826/PN
L18           1 S L7 AND L17
L19           0 S L17 AND L15
L20           1 S 4771279/PN
L21           0 S L15 AND L7 AND L20
L22        2863 S L15 AND L7
L23           0 S 4672444/PN AND L22
L24           0 S L22 AND 4975636/PN
L25           0 S 5600347/PN AND L22
L26           0 S L22 AND  5696531/PN
L27           0 S 5612715/PN AND L22
L28           0 S 5646644/PN AND L22
L29           0 S 5841430/PN AND L22
L30         136 S L22 AND 345/CLAS
L31        5632 S L22 AND RESOLUTION OR LOW RESOLUTION
L32          79 S L31 AND L30
L33          47 S L32 AND VIDEO SIGNAL
L34          14 S RGB AND L33
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4654484

5068649 89/98

5245328 89/99

4851826 132

A/D converter

=> d 1-5

1. 5,585,846, Dec. 17, 1996, Image signal processing circuit in a digital camera having gain and gamma control; Sung-Hun Kim, 348/254, 255, 674 [IMAGE AVAILABLE]

2. 5,119,077, Jun. 2, 1992, Interactive ballistic tracking apparatus; Paul J. Giorgio, 345/163; 364/927.2, 927.5, 927.61, 927.8, 928, 928.2, 929.12, 948.2, 948.21, 959.1, 962, 962.1, 965, 965.5, 965.76, DIG.2 [IMAGE AVAILABLE]

3. 4,856,893, Aug. 15, 1989, Laser distance measuring method and apparatus; Michael T. Breen, 356/5.09; 342/111; 356/5.15, 28.5 [IMAGE AVAILABLE]

4. 4,750,211, Jun. 7, 1988, Method and apparatus for image processing with field portions; William R. Wray, 382/303; 348/716; 358/443, 524; 382/112, 308 [IMAGE AVAILABLE]

5. 4,175,860, Nov. 27, 1979, Dual resolution method and apparatus for use in automated classification of pap smear and other samples; James W. Bacus, 356/39 [IMAGE AVAILABLE]

=> d 1-5 kwic

US PAT NO: 5,585,846 [IMAGE AVAILABLE] L9: 1 of 5

ABSTRACT:
A . . . based on the output of one of a m-bit output of an AGC/gamma controller and a m-bit output of an A/**D converter**. The AGC/gamma controller receives an n-bit clamped image signal from a clamper, while the m-bit A/**D converter** receives an analog input. This selection operation minimizes the need for a high-resolution A/**D converter**.

SUMMARY:

BSUM(4)

Conventional . . . a larger dynamic range, to perform gain and gamma control, than that needed for subsequent processing. Thus, a high resolution A/**D converter** is required to output a sufficent number of bits to secure the dynamic range, even though fewer bits are needed. . .

SUMMARY:

BSUM(5)

In many circumstances, the cost of an overall system increases as the number of bits processed by the A/**D converter** increases. For instance, some conventional digital cameras use extremely costly high-resolution A/D converters. Thus, less costly components can be used, if the resolution of the A/**D converter** is decreased. Divergently, in other circumstances, the cost of an overall system decreases as the number of bits processed by the A/**D converter** increases. Thus, a

less costly syst[redacted]s achieved when using a lower [redacted]solution A/**D converter**.

SUMMARY:

BSUM(7)

It . . . an object of the present invention to provide an image signal processing circuit which allows a user to select between **low-resolution** and **high-resolution** A/D converters.

SUMMARY:

BSUM(10)

In . . . above-referenced objects, the present invention comprises means for performing AGC/gamma control based on an analog image signal and a first A/**D converter** to convert an image signal output by the AGC/gamma controller to a m-bit digital signal. The invention also comprises a second A/**D converter** for converting an image signal to a digital signal, means for clamping the digital signal and means for performing AGC/gamma. . .

US PAT NO: 5,119,077 [IMAGE AVAILABLE] L9: 2 of 5

DETDESC:

DETD(4)

The . . . paths and sixteen bit address paths. Microcontroller 16 contains a central processing unit (CPU), input/output ports, one analog to digital (A/**D**) **converter**, one serial communications interface, 8K bytes of Read Only Memory (ROM), 512 bytes of electrically erasable programmable memory (EEPROM), 256. . .

DETDESC:

DETD(26)

Other . . . that "negative" movements (-X and/or -Y) would result in sequences that take the following form: normal resolution, low resolution, very **low resolution**, very **high resolution**, etc. Furthermore, the operational sequence is not limited to the adjustments previously stated. Theoretically, an infinite number of adjustments are. . .

US PAT NO: 4,856,893 [IMAGE AVAILABLE] L9: 3 of 5

DETDESC:

DETD(16)

The output of filter 62 is connected to an fm demodulator 64, whose output is connected to an A/**D converter** 66. The A/D 66 converts the analog data to a digital signal, which is applied to an input terminal or. . .

DETDESC:

DETD(17)

In . . . can be monitored by the computer 39. The resulting Doppler shift is integrated in the computer and combined with the **low resolution** and **high resolution** range data to provide digital output information at a terminal 68. Software for accomplishing this is

not described be[redacted]e it. . .

US PAT NO: 4,750,211 [IMAGE AVAILABLE] L9: 4 of 5

SUMMARY:

BSUM(20)

The . . . scanner or other input transducer for reaching the photographic record. The latter practice generally employs a scanning element with both **low resolution** and **high resolution**. Where two such scanners are used, the operations can overlap to yield advantages in operating time. In both noted embodiments, . . .

DETDESC:

DETD(5)

With . . . wheel 26 passes to the transducing array 28 different wavelength components of this line segment in controlled selected succession. The A/**D converter** 38 accordingly applies to the processing section 14 digital signals responsive to each line segment of the transparency and further. . .

US PAT NO: 4,175,860 [IMAGE AVAILABLE] L9: 5 of 5

DETDESC:

DETD(6)

The . . . appears on line 34 which extends to an analog-to-digital converter 36 and a video monitor 38. The output of the A/**D converter** 36 is on line 40 which extends to measurement and logic circuitry 42. A dark cell locator and coordinate calculator. . .

DETDESC:

DETD(8)

While . . . to provide electrical signals that are representative of the image that is received and which is thereafter digitized by the A/**D converter** 52 and analyzed by the logic circuitry 56, it should be appreciated that the high resolution image may be projected. . .

DETDESC:

DETD(9)

With . . . problem cell under the objective 12 and a high resolution scene is shown by the video monitor 38 and the A/**D converter** provides a 100.times.100 pixel digital scene that is written into memory of and associated with the circuitry 56. The scene. . .

DETDESC:

DETD(11)

The . . . signal representative of each scene that is received through the color wheel and the resulting signal is applied to the A/**D converter** 36 and then to the analysis and measurement logic circuitry 42 which, as is shown in FIG. 4, performs three. . .

DETDESC:

DETD(13)

With . . . high resolution image that is projected to the vidicon camera 24 which provides electrical signals which are digitized by the A/**D converter** 52 for use by the analysis from classification logic 56. This high resolution scene is measured to find the boundary.

CLAIMS:

CLMS(2)

2. A method in accordance with claim 1 including the step of digitizing said **low resolution** and **high resolution** images into scenes of substantially equal size.

CLAIMS:

CLMS(5)

5. An apparatus in accordance with claim 4 including means for digitizing said **low resolution** and **high resolution** images into scenes of substantially equal size.

#	Patent	Source	[redacted]g	Issue Date	Pages	Curren[redacted] Original Classif	Retrieval Classif	Current Cross Reference
1	5,793,414	U	S	08/11/1998	7	348/13		348/8 ...
2	5,477,397	U	S	12/19/1995	17	386/123		348/390 ...
3	5,191,416	U	T	03/02/1993	18	348/459		
4	5,010,419	U	S	04/23/1991	16	386/107		348/384 ...
5	4,866,520	U	T	09/12/1989	16	348/441		345/136
6	4,727,423	U	S	02/23/1988	8	348/718		345/510 ...
7	4,701,800	U	S	10/20/1987	12	386/84		348/441 ...

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5515081 99

5473059 8

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  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                                                                     *
  *                  W E L C O M E   T O   T H E                        *
  *            U. S.   P A T E N T   T E X T   F I L E                  *
  *                                                                     *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

=> s 345/127/clas

L1             0 345/127/CLAS

=> s 345/127/ccls

L2           235 345/127/CCLS

=> s 345/130/ccls

L3            53 345/130/CCLS

=> s345/132/ccls

'S345' IS NOT A RECOGNIZED COMMAND

=> s 345/132/ccls

L4           173 345/132/CCLS

=> s l2 and l3

L5             7 L2 AND L3

=> s l2 and l4

L6            24 L2 AND L4

=> s l3 and l4

L7             7 L3 AND L4

=> s low resolution or video signal

         1109689 LOW
          113650 RESOLUTION
            4735 LOW RESOLUTION
                   (LOW(W)RESOLUTION)
           94043 VIDEO
          590599 SIGNAL
           32851 VIDEO SIGNAL
                   (VIDEO(W)SIGNAL)
L8         36833 LOW RESOLUTION OR VIDEO SIGNAL

=> s low resolution display

         1109689 LOW
          113650 RESOLUTION
          233558 DISPLAY
L9            92 LOW RESOLUTION DISPLAY
                   (LOW(W)RESOLUTION(W)DISPLAY)

=> s l2 and l9

L10            4 L2 AND L9

=> s l9 and l3
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L11           0 L9 AND L3

=> s l9 and l4

L12          12 L9 AND L4

=> s l9 and l5

L13           0 L9 AND L5

=> s l9 and l6

L14           3 L9 AND L6

=> s l9 and l7

L15           0 L9 AND L7

=> d his


     (FILE 'USPAT' ENTERED AT 09:51:29 ON 09 DEC 1998)
L1            0 S 345/127/CLAS
L2          235 S 345/127/CCLS
L3           53 S 345/130/CCLS
L4          173 S 345/132/CCLS
L5            7 S L2 AND L3
L6           24 S L2 AND L4
L7            7 S L3 AND L4
L8        36833 S LOW RESOLUTION OR VIDEO SIGNAL
L9           92 S LOW RESOLUTION DISPLAY
L10           4 S L2 AND L9
L11           0 S L9 AND L3
L12          12 S L9 AND L4
L13           0 S L9 AND L5
L14           3 S L9 AND L6
L15           0 S L9 AND L7

=> s l9 and 345/clas

         19468 345/CLAS
L16         46 L9 AND 345/CLAS

=> d l16 1-
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1. 5,844,545, Dec. 1, 1998, Image display apparatus capable of combining image displayed with high resolution and image displayed with low resolution; Katsunori Suzuki, et al., **345/156, 112, 146, 163** [IMAGE AVAILABLE]

2. 5,831,614, Nov. 3, 1998, X-Y viewport scroll using location of display with respect to a point; Bruce Tognazzini, et al., **345/341, 121, 123, 156** [IMAGE AVAILABLE]

3. 5,805,148, Sep. 8, 1998, Multistandard video and graphics, high definition display system and method; Kumar B. Swamy, et al., **345/509**, 508 [IMAGE AVAILABLE]

4. 5,764,232, Jun. 9, 1998, Three-dimensional simulator apparatus and image synthesis method; Satoru Oouchi, **345/419** [IMAGE AVAILABLE]

5. 5,710,880, Jan. 20, 1998, Method and system for creating a graphic image with geometric descriptors; Virginia E. Howlett, et al.,

345/468, 467, 47[redacted]**707/528, 535 [IMAGE AVAILABLE]**[redacted]

6. 5,696,531, Dec. 9, 1997, Image display apparatus capable of combining image displayed with high resolution and image displayed with low resolution; Katsunori Suzuki, et al., **345/132, 147, 202** [IMAGE AVAILABLE]

7. 5,684,510, Nov. 4, 1997, Method of font rendering employing grayscale processing of grid fitted fonts; Lenox H. Brassell, et al., **345/443, 136, 468** [IMAGE AVAILABLE]

8. 5,663,772, Sep. 2, 1997, Gray-level image processing with weighting factors to reduce flicker; Hirotoshi Uehara, et al., 348/671; **345/147**; 358/458; 382/162 [IMAGE AVAILABLE]

9. 5,612,715, Mar. 18, 1997, System and method for dynamically adjusting display resolution of computer generated displays; Nobuo Karaki, et al., **345/132, 428** [IMAGE AVAILABLE]

10. 5,610,630, Mar. 11, 1997, Graphic display control system; Hiroshi Nakamura, et al., **345/340, 508** [IMAGE AVAILABLE]

11. 5,600,347, Feb. 4, 1997, Horizontal image expansion system for flat panel displays; Stephen P. Thompson, et al., **345/127, 132** [IMAGE AVAILABLE]

12. 5,594,473, Jan. 14, 1997, Personal computer apparatus for holding and modifying video output signals; Jay G. Miner, et al., **345/199, 186** [IMAGE AVAILABLE]

13. 5,559,530, Sep. 24, 1996, Image data processing apparatus; Haruo Yamashita, et al., **345/136, 23, 509**; 382/205 [IMAGE AVAILABLE]

14. 5,532,716, Jul. 2, 1996, Resolution conversion system; Yoshinobu Sano, **345/132, 127** [IMAGE AVAILABLE]

15. 5,528,740, Jun. 18, 1996, Conversion of higher resolution images for display on a lower-resolution display device; Timothy J. Hill, et al., **345/428**; 382/232, 233 [IMAGE AVAILABLE]

16. 5,459,484, Oct. 17, 1995, Display control system and method of using same; Hung Nguyen, **345/129, 127** [IMAGE AVAILABLE]

17. 5,402,149, Mar. 28, 1995, Matrix display apparatus, method and circuit for driving same and computer having same; Atsuhiko Amagami, et al., **345/132, 55, 100** [IMAGE AVAILABLE]

18. 5,307,055, Apr. 26, 1994, Display control device incorporating an auxiliary display; Herbert B. Baskin, et al., **345/1**; 340/825.17; 348/734; 434/350 [IMAGE AVAILABLE]

19. 5,303,334, Apr. 12, 1994, System for generating a rasterized graphic image; Douglas E. Snyder, et al., 395/109; **345/429, 430, 435**; 358/298 [IMAGE AVAILABLE]

20. 5,278,678, Jan. 11, 1994, Color table display for interpolated color and anti-aliasing; Steven J. Harrington, 358/518; **345/149**; 358/525, 534 [IMAGE AVAILABLE]

21. 5,276,788, Jan. 4, 1994, Video image creation systems; Alan L. Stapleton, **345/439, 501, 508** [IMAGE AVAILABLE]

22. 5,272,469, Dec. 21, 1993, Process for mapping high resolution data into a lower resolution depiction; Kazem Memarzadeh, **345/173, 156**

[IMAGE AVAILABLE]

23. 5,103,499, Apr. 7, 1992, Beam synchronized coprocessor; Jay G. Miner, et al., **345/503, 509, 511** [IMAGE AVAILABLE]

24. 5,099,435, Mar. 24, 1992, Method and apparatus for conversion of outline characters to bitmap characters; John S. Collins, et al., **345/469, 170, 428** [IMAGE AVAILABLE]

25. 5,065,346, Nov. 12, 1991, Method and apparatus for employing a buffer memory to allow low resolution video data to be simultaneously displayed in window fashion with high resolution video data; Toshihiko Kawai, et al., **345/428, 115, 132**; 348/552 [IMAGE AVAILABLE]

26. 5,036,317, Jul. 30, 1991, Flat panel apparatus for addressing optical data storage locations; Thomas S. Buzak, **345/74, 204**; 349/31; 365/112, 118 [IMAGE AVAILABLE]

27. 5,029,107, Jul. 2, 1991, Apparatus and accompanying method for converting a bit mapped monochromatic image to a grey scale image using table look up operations; Jack C. Lee, **345/431, 132, 149** [IMAGE AVAILABLE]

28. 4,975,636, Dec. 4, 1990, Method and apparatus for selecting and displaying a high resolution window from a main display; Patricia A. Desautels, 324/121R; **345/132, 138**; 702/67 [IMAGE AVAILABLE]

29. 4,959,801, Sep. 25, 1990, Outline-to-bitmap character generator; Philip G. Apley, et al., **345/469, 128, 144, 170** [IMAGE AVAILABLE]

30. 4,931,956, Jun. 5, 1990, Video image creation systems; Alan L. Stapleton, **345/428, 173, 431** [IMAGE AVAILABLE]

31. 4,907,282, Mar. 6, 1990, Method and apparatus for constructing, storing and displaying characters; Joseph P. Daly, et al., 382/242; **345/128, 144, 147, 150, 471** [IMAGE AVAILABLE]

32. 4,888,583, Dec. 19, 1989, Method and apparatus for rendering an image from data arranged in a constructive solid geometry format; Terry J. Ligocki, et al., **345/420, 421, 423, 424** [IMAGE AVAILABLE]

33. 4,874,164, Oct. 17, 1989, Personal computer apparatus for block transfer of bit-mapped image data; Jay G. Miner, et al., **345/509, 510** [IMAGE AVAILABLE]

34. 4,864,538, Sep. 5, 1989, Method and apparatus for addressing optical data storage locations; Thomas S. Buzak, 365/128; **345/87**; 365/112, 118 [IMAGE AVAILABLE]

35. 4,851,834, Jul. 25, 1989, Multiport memory and source arrangement for pixel information; Thomas C. Stockebrand, et al., **345/509, 191, 198** [IMAGE AVAILABLE]

36. 4,851,826, Jul. 25, 1989, Computer video demultiplexer; Hedley C. Davis, **345/132, 127** [IMAGE AVAILABLE]

37. 4,827,404, May 2, 1989, Method and system for computer programming; David R. Barstow, et al., 395/500; **345/952**; 364/188, 192, 232.3, 236.8, 242.4, 254, 254.5, 280, 280.4, 280.7, 286, 286.3, DIG.1 [IMAGE AVAILABLE]

38. 4,785,391, Nov. 15, 1988, Automated bitmap character generation from outlines; Phillip G. Apley, et al., **345/469, 128, 144,**

170, 428, 439, 4[redacted][IMAGE AVAILABLE]

39. 4,771,279, Sep. 13, 1988, Dual clock shift register; Marc R. Hannah, **345/197, 132;** 377/54, 67 [IMAGE AVAILABLE]

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42. 4,590,464, May 20, 1986, Display apparatus using dot matrixes; Mamoru Imaizumi, et al., **345/172, 141, 507** [IMAGE AVAILABLE]

43. 4,556,878, Dec. 3, 1985, Display of graphics using a non-all points addressable display; Jerold D. Dwire, et al., **345/121, 133, 140** [IMAGE AVAILABLE]

44. 4,533,909, Aug. 6, 1985, Computer with color display; Wendell B. Sander, **345/150, 147, 192** [IMAGE AVAILABLE]

45. 4,439,762, Mar. 27, 1984, Graphics memory expansion system; James G. Van Vliet, et al., **345/508, 132** [IMAGE AVAILABLE]

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=> d his

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     (FILE 'USPAT' ENTERED AT 09:51:29 ON 09 DEC 1998)
L1             0 S 345/127/CLAS
L2           235 S 345/127/CCLS
L3            53 S 345/130/CCLS
L4           173 S 345/132/CCLS
L5             7 S L2 AND L3
L6            24 S L2 AND L4
L7             7 S L3 AND L4
L8         36833 S LOW RESOLUTION OR VIDEO SIGNAL
L9            92 S LOW RESOLUTION DISPLAY
L10            4 S L2 AND L9
L11            0 S L9 AND L3
L12           12 S L9 AND L4
L13            0 S L9 AND L5
L14            3 S L9 AND L6
L15            0 S L9 AND L7
L16           46 S L9 AND 345/CLAS
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#	Patent	Source	Flag	Issue Date	Pages	Current Original Classif	Retrieval Classif	Current Cross Reference
1	5,721,565	U	T	02/24/1998	21	345/127		345/132
2	5,682,181	U	S	10/28/1997	41	345/158		345/9
3	5,646,644	U	T	07/08/1997	17	345/100		345/87 ...
4	5,555,002	U	S	09/10/1996	13	345/121		345/127
5	5,552,801	U	S	09/03/1996	18	345/100		345/87 ...
6	5,510,861	U	S	04/23/1996	13	353/119		353/38 ...
7	5,483,382	U	S	01/09/1996	18	359/786		359/716
8	5,459,484	U	T	10/17/1995	14	345/129		345/127
9	5,043,811	U	S	08/27/1991	40	348/458		348/565

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  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                                                                     *
  *                W E L C O M E   T O   T H E                          *
  *          U. S.   P A T E N T   T E X T   F I L E                    *
  *                                                                     *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

=> s 345/127/clas

L1             0 345/127/CLAS

=> s 345/127/ccls

L2           235 345/127/CCLS

=> s 345/130/ccls

L3            53 345/130/CCLS

=> s345/132/ccls

'S345' IS NOT A RECOGNIZED COMMAND

=> s 345/132/ccls

L4           173 345/132/CCLS

=> s l2 and l3

L5             7 L2 AND L3

=> s l2 and l4

L6            24 L2 AND L4

=> s l3 and l4

L7             7 L3 AND L4

=> s low resolution or video signal

        1109689 LOW
         113650 RESOLUTION
           4735 LOW RESOLUTION
                  (LOW(W)RESOLUTION)
          94043 VIDEO
         590599 SIGNAL
          32851 VIDEO SIGNAL
                  (VIDEO(W)SIGNAL)
L8        36833 LOW RESOLUTION OR VIDEO SIGNAL

=> s low resolution display

        1109689 LOW
         113650 RESOLUTION
         233558 DISPLAY
L9           92 LOW RESOLUTION DISPLAY
                  (LOW(W)RESOLUTION(W)DISPLAY)

=> s l2 and l9

L10            4 L2 AND L9

=> s l9 and l3
```

```
L11           0 L9 AND L3

=> s l9 and l4

L12          12 L9 AND L4

=> s l9 and l5

L13           0 L9 AND L5

=> s l9 and l6

L14           3 L9 AND L6

=> s l9 and l7

L15           0 L9 AND L7

=> d his


     (FILE 'USPAT' ENTERED AT 09:51:29 ON 09 DEC 1998)
L1            0 S 345/127/CLAS
L2          235 S 345/127/CCLS
L3           53 S 345/130/CCLS
L4          173 S 345/132/CCLS
L5            7 S L2 AND L3
L6           24 S L2 AND L4
L7            7 S L3 AND L4
L8        36833 S LOW RESOLUTION OR VIDEO SIGNAL
L9           92 S LOW RESOLUTION DISPLAY
L10           4 S L2 AND L9
L11           0 S L9 AND L3
L12          12 S L9 AND L4
L13           0 S L9 AND L5
L14           3 S L9 AND L6
L15           0 S L9 AND L7

=> s l9 and 345/clas

         19468 345/CLAS
L16         46 L9 AND 345/CLAS

=> d l16 1-
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1. 5,844,545, Dec. 1, 1998, Image display apparatus capable of combining image displayed with high resolution and image displayed with low resolution; Katsunori Suzuki, et al., **345/156, 112, 146, 163** [IMAGE AVAILABLE]

2. 5,831,614, Nov. 3, 1998, X-Y viewport scroll using location of display with respect to a point; Bruce Tognazzini, et al., **345/341, 121, 123, 156** [IMAGE AVAILABLE]

3. 5,805,148, Sep. 8, 1998, Multistandard video and graphics, high definition display system and method; Kumar B. Swamy, et al., **345/509**, 508 [IMAGE AVAILABLE]

4. 5,764,232, Jun. 9, 1998, Three-dimensional simulator apparatus and image synthesis method; Satoru Oouchi, **345/419** [IMAGE AVAILABLE]

5. 5,710,880, Jan. 20, 1998, Method and system for creating a graphic image with geometric descriptors; Virginia E. Howlett, et al.,

345/468, 467, 470[redacted]**07/528, 535 [IMAGE AVAILABLE]**

6. 5,696,531, Dec. 9, 1997, Image display apparatus capable of combining image displayed with high resolution and image displayed with low resolution; Katsunori Suzuki, et al., **345/132, 147, 202** [IMAGE AVAILABLE]

7. 5,684,510, Nov. 4, 1997, Method of font rendering employing grayscale processing of grid fitted fonts; Lenox H. Brassell, et al., **345/443, 136, 468** [IMAGE AVAILABLE]

8. 5,663,772, Sep. 2, 1997, Gray-level image processing with weighting factors to reduce flicker; Hirotoshi Uehara, et al., 348/671; **345/147**; 358/458; 382/162 [IMAGE AVAILABLE]

9. 5,612,715, Mar. 18, 1997, System and method for dynamically adjusting display resolution of computer generated displays; Nobuo Karaki, et al., **345/132, 428** [IMAGE AVAILABLE]

10. 5,610,630, Mar. 11, 1997, Graphic display control system; Hiroshi Nakamura, et al., **345/340, 508** [IMAGE AVAILABLE]

11. 5,600,347, Feb. 4, 1997, Horizontal image expansion system for flat panel displays; Stephen P. Thompson, et al., **345/127, 132** [IMAGE AVAILABLE]

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[IMAGE AVAILABLE]

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     (FILE 'USPAT' ENTERED AT 09:51:29 ON 09 DEC 1998)
L1             0 S 345/127/CLAS
L2           235 S 345/127/CCLS
L3            53 S 345/130/CCLS
L4           173 S 345/132/CCLS
L5             7 S L2 AND L3
L6            24 S L2 AND L4
L7             7 S L3 AND L4
L8         36833 S LOW RESOLUTION OR VIDEO SIGNAL
L9            92 S LOW RESOLUTION DISPLAY
L10            4 S L2 AND L9
L11            0 S L9 AND L3
L12           12 S L9 AND L4
L13            0 S L9 AND L5
L14            3 S L9 AND L6
L15            0 S L9 AND L7
L16           46 S L9 AND 345/CLAS
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#	Patent	Source	Flag	Issue Date	Pages	Current Original Classif	Retrieval Classif	Current Cross Reference
1	5,721,565	U	T	02/24/1998	21	345/127		345/132
2	5,682,181	U	S	10/28/1997	41	345/158		345/9
3	5,646,644	U	T	07/08/1997	17	345/100		345/87 ...
4	5,555,002	U	S	09/10/1996	13	345/121		345/127
5	5,552,801	U	S	09/03/1996	18	345/100		345/87 ...
6	5,510,861	U	S	04/23/1996	13	353/119		353/38 ...
7	5,483,382	U	S	01/09/1996	18	359/786		359/716
8	5,459,484	U	T	10/17/1995	14	345/129		345/127
9	5,043,811	U	S	08/27/1991	40	348/458		348/565

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(FILE 'USPAT' ENTERED AT 16:43:09 ON 09 DEC 1998)

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L1            0 S 5406308
L2            1 S 5406308/PN
L3        88961 S SERIAL
L4            0 S L1 AND L2
L5       152455 S ANALOG
L6            0 S L1 AND L5
L7        11579 S SERIAL (2W) PARALLEL
L8            0 S L1 AND L7
L9            1 S 5696531/PN
L10           0 S L7 AND L9
L11           1 S 5283561/PN
L12           0 S L7 AND L11
L13           1 S 5065346/PN
L14           1 S L7 AND L13
L15       64358 S ANALOG (2W) DIGITAL
L16           0 S L15 AND L13
L17           1 S 4851826/PN
L18           1 S L7 AND L17
L19           0 S L17 AND L15
L20           1 S 4771279/PN
L21           0 S L15 AND L7 AND L20
L22        2863 S L15 AND L7
L23           0 S 4672444/PN AND L22
L24           0 S L22 AND 4975636/PN
L25           0 S 5600347/PN AND L22
L26           0 S L22 AND  5696531/PN
L27           0 S 5612715/PN AND L22
L28           0 S 5646644/PN AND L22
L29           0 S 5841430/PN AND L22
L30         136 S L22 AND 345/CLAS
L31        5632 S L22 AND RESOLUTION OR LOW RESOLUTION
L32          79 S L31 AND L30
L33          47 S L32 AND VIDEO SIGNAL
L34          14 S RGB AND L33
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5068649 89/98

5245328 89/99

4851826 132

A/D converter

=> d 1-5

1. 5,585,846, Dec. 17, 1996, Image signal processing circuit in a digital camera having gain and gamma control; Sung-Hun Kim, 348/254, 255, 674 [IMAGE AVAILABLE]

2. 5,119,077, Jun. 2, 1992, Interactive ballistic tracking apparatus; Paul J. Giorgio, 345/163; 364/927.2, 927.5, 927.61, 927.8, 928, 928.2, 929.12, 948.2, 948.21, 959.1, 962, 962.1, 965, 965.5, 965.76, DIG.2 [IMAGE AVAILABLE]

3. 4,856,893, Aug. 15, 1989, Laser distance measuring method and apparatus; Michael T. Breen, 356/5.09; 342/111; 356/5.15, 28.5 [IMAGE AVAILABLE]

4. 4,750,211, Jun. 7, 1988, Method and apparatus for image processing with field portions; William R. Wray, 382/303; 348/716; 358/443, 524; 382/112, 308 [IMAGE AVAILABLE]

5. 4,175,860, Nov. 27, 1979, Dual resolution method and apparatus for use in automated classification of pap smear and other samples; James W. Bacus, 356/39 [IMAGE AVAILABLE]

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US PAT NO: 5,585,846 [IMAGE AVAILABLE] L9: 1 of 5

ABSTRACT:
A . . . based on the output of one of a m-bit output of an AGC/gamma controller and a m-bit output of an A/**D converter**. The AGC/gamma controller receives an n-bit clamped image signal from a clamper, while the m-bit A/**D converter** receives an analog input. This selection operation minimizes the need for a high-resolution A/**D converter**.

SUMMARY:

BSUM(4)

Conventional . . . a larger dynamic range, to perform gain and gamma control, than that needed for subsequent processing. Thus, a high resolution A/**D converter** is required to output a sufficent number of bits to secure the dynamic range, even though fewer bits are needed. . .

SUMMARY:

BSUM(5)

In many circumstances, the cost of an overall system increases as the number of bits processed by the A/**D converter** increases. For instance, some conventional digital cameras use extremely costly high-resolution A/D converters. Thus, less costly components can be used, if the resolution of the A/**D converter** is decreased. Divergently, in other circumstances, the cost of an overall system decreases as the number of bits processed by the A/**D converter** increases. Thus, a

less costly syste[redacted] achieved when using a lower [redacted]olution A/D **converter**.

SUMMARY:

BSUM(7)

It . . . an object of the present invention to provide an image signal processing circuit which allows a user to select between **low-resolution** and **high-resolution** A/D converters.

SUMMARY:

BSUM(10)

In . . . above-referenced objects, the present invention comprises means for performing AGC/gamma control based on an analog image signal and a first A/**D converter** to convert an image signal output by the AGC/gamma controller to a m-bit digital signal. The invention also comprises a second A/**D converter** for converting an image signal to a digital signal, means for clamping the digital signal and means for performing AGC/gamma. . .

US PAT NO: 5,119,077 [IMAGE AVAILABLE] L9: 2 of 5

DETDESC:

DETD(4)

The . . . paths and sixteen bit address paths. Microcontroller 16 contains a central processing unit (CPU), input/output ports, one analog to digital (A/D) **converter**, one serial communications interface, 8K bytes of Read Only Memory (ROM), 512 bytes of electrically erasable programmable memory (EEPROM), 256. . .

DETDESC:

DETD(26)

Other . . . that "negative" movements (-X and/or -Y) would result in sequences that take the following form: normal resolution, low resolution, very **low resolution**, very **high resolution**, etc. Furthermore, the operational sequence is not limited to the adjustments previously stated. Theoretically, an infinite number of adjustments are. . .

US PAT NO: 4,856,893 [IMAGE AVAILABLE] L9: 3 of 5

DETDESC:

DETD(16)

The output of filter 62 is connected to an fm demodulator 64, whose output is connected to an A/**D converter** 66. The A/D 66 converts the analog data to a digital signal, which is applied to an input terminal or. . .

DETDESC:

DETD(17)

In . . . can be monitored by the computer 39. The resulting Doppler shift is integrated in the computer and combined with the **low resolution** and **high resolution** range data to provide digital output information at a terminal 68. Software for accomplishing this is

not described beca[redacted] it. . .

US PAT NO: 4,750,211 [IMAGE AVAILABLE] L9: 4 of 5

SUMMARY:

BSUM(20)

The . . . scanner or other input transducer for reaching the photographic record. The latter practice generally employs a scanning element with both **low resolution** and **high resolution**. Where two such scanners are used, the operations can overlap to yield advantages in operating time. In both noted embodiments,. . .

DETDESC:

DETD(5)

With . . . wheel 26 passes to the transducing array 28 different wavelength components of this line segment in controlled selected succession. The A/**D converter** 38 accordingly applies to the processing section 14 digital signals responsive to each line segment of the transparency and further. . .

US PAT NO: 4,175,860 [IMAGE AVAILABLE] L9: 5 of 5

DETDESC:

DETD(6)

The . . . appears on line 34 which extends to an analog-to-digital converter 36 and a video monitor 38. The output of the A/**D converter** 36 is on line 40 which extends to measurement and logic circuitry 42. A dark cell locator and coordinate calculator. . .

DETDESC:

DETD(8)

While . . . to provide electrical signals that are representative of the image that is received and which is thereafter digitized by the A/**D converter** 52 and analyzed by the logic circuitry 56, it should be appreciated that the high resolution image may be projected. . .

DETDESC:

DETD(9)

With . . . problem cell under the objective 12 and a high resolution scene is shown by the video monitor 38 and the A/**D converter** provides a 100.times.100 pixel digital scene that is written into memory of and associated with the circuitry 56. The scene. . .

DETDESC:

DETD(11)

The . . . signal representative of each scene that is received through the color wheel and the resulting signal is applied to the A/**D converter** 36 and then to the analysis and measurement logic circuitry 42 which, as is shown in FIG. 4, performs three. . .

DETDESC:

DETD(13)

With . . . high resolution image that is projected to the vidicon camera 24 which provides electrical signals which are digitized by the **A/D converter** 52 for use by the analysis from classification logic 56. This high resolution scene is measured to find the boundary.

CLAIMS:

CLMS(2)

2. A method in accordance with claim 1 including the step of digitizing said **low resolution** and **high resolution** images into scenes of substantially equal size.

CLAIMS:

CLMS(5)

5. An apparatus in accordance with claim 4 including means for digitizing said **low resolution** and **high resolution** images into scenes of substantially equal size.

#	Patent	Source	[redacted]g	Issue Date	Pages	Current Original Classif	[redacted] Retrieval Classif	Current Cross Reference
1	5,793,414	U	S	08/11/1998	7	348/13		348/8 ...
2	5,477,397	U	S	12/19/1995	17	386/123		348/390 ...
3	5,191,416	U	T	03/02/1993	18	348/459		
4	5,010,419	U	S	04/23/1991	16	386/107		348/384 ...
5	4,866,520	U	T	09/12/1989	16	348/441		345/136
6	4,727,423	U	S	02/23/1988	8	348/718		345/510 ...
7	4,701,800	U	S	10/20/1987	12	386/84		348/441 ...

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